

# *Didymoplexis micradenia* (Rchb.f.) Hemsl. (Orchidaceae): A new record for the Australian flora

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## Summary

Gray, B. (2017). *Didymoplexis micradenia* (Rchb.f.) Hemsl. (Orchidaceae): A new record for the Australian flora. *Austrobaileya* 10(1): 200–204. *Didymoplexis micradenia* previously recorded from many western Pacific islands, Java and Vietnam, was recently discovered in north Queensland and is a new species record for Australia. Morphologically this species is similar to *D. pallens* Griff., which was, until now, the only known representative of the genus in Australia. *Didymoplexis micradenia* has a much smaller, pinkish-white flower, a shorter column foot and toothed apical margin of the lip. A description based on Australian material, concurring with the protologue, photographs and a key to *Didymoplexis* in Australia are provided here.

Key Words: Orchidaceae, *Didymoplexis*, *Didymoplexis micradenia*, Australia flora, Queensland flora, new species record, taxonomy, identification key

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## Introduction

*Didymoplexis* Griff. is a small genus of about 20 species of leafless, achlorophyllous terrestrial orchids distributed from Africa, through to Madagascar, India, Ryukyu Islands, Taiwan, Southeast Asia, northern Australia and the Pacific Islands (Pridgeon *et al.* 2005). In Australia, *D. pallens* Griff., the type species of the genus, has been the only member of the genus recorded occurring in northern Australia from the Kimberley region of Western Australia to northern Queensland (Dockrill 1992; Jones *et al.* 2010).

A recent collection from the Daintree National Park in north Queensland's Wet Tropics, reveals a previously unrecorded *Didymoplexis* taxon, *D. micradenia* (Rchb.f.) Hemsl., a species previously recorded from Vietnam, West Java, Taiwan, Palau, Samoa, Vanuatu, Tonga, Niue and New Caledonia

(Smith 1905, 1908; Lewis & Cribb 1989, 1991; Comber 1990; Cribb & Whistler 1996; Hsu & Chung 2007). *Didymoplexis micradenia* is closely related to *D. pallens* but differs in having smaller flowers, and a suite of different floral morphological characteristics.

## Materials and methods

This study is based on examination of living plants in the field and preserved spirit collections deposited in the Australian Tropical Herbarium (CNS) (herbarium acronym follow Thiers (continuously updated)). Measurements were made using live specimens in the field and also from spirit materials, namely *Gray BG9752, de Groot & Hawkes* (CNS) and *Gray BG9753, de Groot & Hawkes* (CNS). The isotype specimen at K was viewed online.

## Key to the Australian species of *Didymoplexis*

- 1 Flowers crystalline white; column foot *c.* 2 mm long; lip 5–7 mm long, 6–9 mm wide, side lobes exceeding the apex. . . . . ***D. pallens***
1. Flowers pinkish-white; column foot less than 1 mm long; lip obovate, 4–6 mm long, 4–5 mm wide, margin of apex rounded and toothed. . . . . ***D. micradenia***

### Taxonomy

**Didymoplexis micradenia** (Rchb.f.) Hemsl., *J. Linn. Soc., Bot.* 20: 311 (1883); *Epiphanes micradenia* Rchb.f., *Fl. Vit. [Seemann]* 295 (1868). **Type:** Fiji. Ovalau, in 1860, B.C. Seemann 610 (holo: W n.v.; iso: K 000942690).

Leafless and achlorophyllous terrestrial herb 6–18 cm high with a subterranean, pale yellowish brown, fleshy, rhizome, 2–5 cm long. Inflorescence upright, glabrous, pale brown, a raceme bearing 3–8 pinkish white flowers that open one at a time. Flowers pinkish white, not opening widely, sepals and petals connate at the base, forming a tube. Pedicel and ovary, 6–8 mm long, glabrous; Sepals and petals connate for *c.* 2/3 of their

length, hooded over the column and forming a tube; dorsal sepal 8–10 mm long, petals shorter; lateral sepals 6.5–7 mm long connate for *c.* 3/4 of their length, united with the petals near the base, the structure broadly bilobed and strongly deflexed in the upper 1/3. Labellum white, obovate, erect on both sides, 6–7.5 mm long, 5–6 mm wide when flattened, apex obtuse, with small irregular teeth, disc with a longitudinal raised, pinkish, warty keel. Column white, clavate, 6–7 mm long, apex furnished with 2 rhombic wings, column foot inconspicuous, < 1 mm long; pollinia 4 in 2 pairs. Capsule 2–2.3 cm long, triangular in cross section; pedicel elongates 12–20 cm long after fertilisation. **Figs. 1–4.**



**Fig. 1.** *Didymoplexis micradenia*. growth habit of a mature flowering plant. (Gray BG9752, CNS). Photo: T. de Groot.



**Fig. 2.** *Didymoplexis micradenia*. close-up of immature fruits (Gray BG9753, CNS). Photo: T. Hawkes.



**Fig. 3.** *Didymoplexis micradenia*. face view of an open flower (Gray BG9752, CNS). Photo: T. de Groot.



**Fig. 4.** *Didymoplexis micradenia*. lateral view of an open flower (Gray BG9752, CNS). Photo: T. Hawkes.

**Additional specimens examined:** **Queensland.** COOK DISTRICT: Whyanbeel, Daintree National Park, High Falls Creek, Oct 2016, Gray BG 9752, de Groot & Hawkes (CNS); *ibid.*, Oct 2016, Gray BG9753, de Groot & Hawkes (CNS).

**Distribution and habitat:** The population of *Didymoplexis micradenia* in the Whyanbeel Valley of the Daintree National Park occurs under dense tree cover in rainforest over granite substrate. As these plants are very difficult to spot amongst dry leaves on the forest floor, it is likely that *D. micradenia* may be more common and widespread than recorded in this study. Currently, only 13 individuals have been located, despite extensive searching and all are within an area of approximately 200 × 20 m. Most plants observed were fruiting, with only five flowering individuals observed during the study.

**Notes:** The first plant of this species was discovered by Tony de Groot, who spent many days in the field to locate more plants and extend the population. During observations

carried out together with Tony de Groot and Tim Hawkes, it was observed that flowers begin to open at about 10 am and by 1–1.30 pm are closing. In the field, we failed to observe any potential pollinators. However, we did notice that small diptera often visited the flowers without entering. No perfume was detected from the flowers.

The other species of *Didymoplexis* that can be found in Australia, *D. pallens*, usually occurs in open forest situations, flowering soon after the beginning of the wet season. In contrast, based on our limited field observations made during the study timeframe, we conclude that *D. micradenia* is restricted to the rainforest, under dense tree cover, flowering possibly after any heavy summer rain events. In addition, flowers of *D. pallens* are crystalline white and larger in size (5–9 mm) (Figs. 5–7) compared with the pinkish-white flowers of *D. micradenia* that are smaller, flowers (4–5 mm).



**Fig. 5.** *Didymoplexis pallens*. growth habit of mature flowering plants amongst grass and sedges in open forest (Gray BG4966, CNS). Photo: B. Gray.

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**Fig. 6.** *Didymoplexis pallens*. lateral view of an open flower (Gray BG4966, CNS). Photo: B. Gray.



**Fig. 7.** *Didymoplexis pallens*. face view of an open flower (Gray BG4966, CNS). Photo: B. Gray.

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